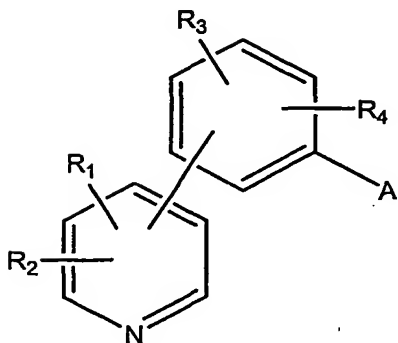


## CLAIMS

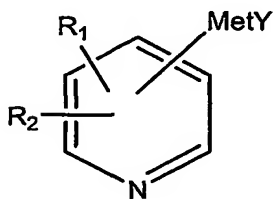
1. A method for the preparation of compounds of formula 1,



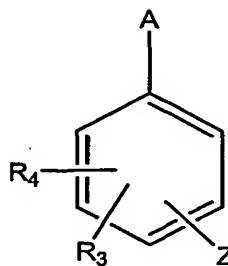
1

in which a solution containing a compound of formula 2 is added dropwise to a solution containing a compound of formula 3

2



3



in which:

- Met represents Mg or Zn,
- Y represents Cl, Br, I or acetoxy,
- Z represents I, Br, Cl, triflate, sulphonate, phosphate,
- R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, which are the same as one another or different, represent hydrogen, a linear and/or branched C<sub>1</sub>-C<sub>4</sub> alkyl, and/or an aryl, and/or a heteroaryl, or R<sub>1</sub> and R<sub>2</sub> and/or R<sub>3</sub> and R<sub>4</sub>, taken together, form a C<sub>3</sub>-C<sub>8</sub> ring, an aryl and/or a heteroaryl,

- A represents  $-\text{COR}_5$ , where  $\text{R}_5$  represents hydrogen, a linear and/or branched  $\text{C}_1\text{-C}_4$  alkyl, and/or an aryl, and/or a heteroaryl, or
  - A represents  $-\text{CR}_5(\text{OR}_6)(\text{OR}_7)$  where  $\text{R}_5$  has the meaning described above and  $\text{R}_6$  and  $\text{R}_7$ , which are the same as one another or different, represent a linear and/or branched  $\text{C}_1\text{-C}_4$  alkyl, and/or an aryl, and/or a heteroaryl, or  $\text{R}_6$  and  $\text{R}_7$ , joined together, represent a  $\text{C}_1\text{-C}_8$  alkyl or alkenyl, in the presence of catalytic systems based on palladium or nickel.
2. A method according to Claim 1, characterized in that compound 2 is prepared by reaction of the corresponding halogeno-pyridine with a catalytic quantity of alkyl halide, in the presence of an at least stoichiometric quantity of magnesium.
  3. A method according to Claim 2, characterized in that 100 moles of the halogeno-pyridine are reacted with 10-20 moles of alkyl halide and 100-120 moles of magnesium.
  4. A method according to Claim 2, characterized in that the alkyl halide is a  $\text{C}_1\text{-C}_8$  alkyl chloride or bromide.
  5. A method according to Claim 4, characterized in that the alkyl halide is ethyl bromide or isopropyl bromide or chloride.
  6. A method according to Claim 1, characterized in that compound 2 is prepared by reaction of the corresponding halogeno-pyridine with an at least stoichiometric quantity of an alkyl-magnesium halide.
  7. A method according to Claim 6, characterized in that the alkyl-magnesium halide is a chloride or a bromide of a  $\text{C}_1\text{-C}_8$  alkyl-magnesium salt, preferably an ethyl or isopropyl magnesium salt.
  8. A method according to Claim 1, characterized in that the palladium and/or the nickel are used in quantities of 0.01-10 moles, preferably 0.05-2 moles, per 100 moles of compound 2.
  9. A method according to Claim 1, characterized in that the solvent is an ethereal solvent, preferably THF, 1,2 dimethoxyethane, and/or 1,1-diethoxymethane, or a THF/toluene mixture.
  10. A method according to Claim 1, characterized in that it is performed at a temperature of between 20 and  $100^\circ\text{C}$ , preferably between 40 and  $80^\circ\text{C}$ .

11. A method according to Claim 1, characterized in that it is performed in the presence of phosphines and/or phosphites.
12. A method according to Claim 11, characterized in that the phosphines and/or phosphites are used in a molar ratio of metal:phosphine/phosphite of between 1:1 and 1:6.
13. A method according to Claim 11, characterized in that the phosphines are selected from triaryl phosphines, diarylalkyl phosphines, trialkyl phosphines, and bidentate phosphines.
14. A method according to Claim 11, characterized in that palladium is used in the form of complexes with phosphines, preferably as  $\text{Pd}(\text{PPh}_3)_4$ .
15. A method according to Claim 11, characterized in that palladium is used in the salt form, generally in acetate or chloride form, in combination with a phosphine, preferably triphenyl phosphine.
16. A method according to Claim 11, characterized in that nickel is used in the form of complexes with phosphines, preferably bidentate phosphines.
17. A method according to Claim 1, characterized in that it is performed in the presence of zinc salts, preferably  $\text{ZnCl}_2$ ,  $\text{ZnBr}_2$  or  $\text{Zn}(\text{OAc})_2$ .
18. A method according to Claim 17, characterized in that the zinc salt is used in quantities of 25-120 moles, preferably 35-70 moles, per 100 moles of compound 2.
19. A method according to Claim 18 in which Met is magnesium, characterized in that 0.01-0.1 moles of palladium and 40-70 moles of zinc are used per 100 moles of compound 2.
20. A method according to Claim 17, characterized in that the molar ratio between palladium and compound 2 is less than 1:100.
21. A method according to Claim 1, characterized in that compound 2 is used in a dynamic deficiency relative to the zinc salt.
22. A method according to Claim 1, characterized in that 0.5-1.2 moles, preferably 1 mole, of compound 2 is used per 1 mole of compound 3.
23. A method for the preparation of heterocyclic azahexane derivatives with antiviral action, characterized in that it comprises a method according to Claims 1-22.